

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of acquiring a remote node that is not yet acquired by a hub in a satellite communication network, said method comprising steps of:

    sending a first acquisition command from the hub to the remote node that is not yet acquired to acquire the remote node to be added to the network, said first acquisition command

        instructing the remote node to send an acquisition response, and

        including a first frequency;

    sending a first acquisition response based on the first acquisition command from the remote node to the hub using the first frequency; ~~and~~

    sending a second acquisition command from the hub before receiving the first acquisition response at the hub;

selecting a next acquisition remote node according to at least one of a round robin algorithm, a least recently used algorithm, and a priority algorithm; and

selecting a next frequency based on an offset frequency of a previous acquisition command.

wherein the second acquisition command identifies the next acquisition remote node for acquisition and includes the next frequency.

Claim 2 (Previously Presented): The method of claim 1, wherein the second acquisition command identifies the remote node or another remote node that is not yet acquired by the hub for acquisition and includes one of the first frequency and a second frequency.

Claim 3 (Previously Presented): The method of claim 1, further comprising steps of:  
detecting a symbol offset in the first response at the hub; and  
sending a symbol offset correction factor from the hub to the remote node, said  
correction factor used by the remote node in a subsequent transmission from the remote node  
to the hub to correct the symbol offset detected in the detecting step.

Claim 4 (Previously Presented): The method of claim 1, further comprising a step of:  
sending at least a third acquisition command from the hub before receiving the first  
response at the hub.

Claim 5 (Previously Presented): The method of claim 1, further comprising sending  
the second acquisition command from the hub within a latency time of sending the first  
acquisition command from the hub,  
wherein the latency time is twice a time elapsed between sending a message from the  
hub and receiving the message at the remote node.

Claim 6 (Canceled).

Claim 7 (Previously Presented): The method of claim 1, wherein the first frequency  
includes a frequency offset that informs the remote node to transmit a response based on a  
predetermined nominal remote transmit frequency and the frequency offset.

Claim 8 (Previously Presented): A method of acquiring a remote node that is not yet acquired by a hub in a synchronous satellite communication network, said method comprising steps of:

transmitting a sequence of downlink messages from the hub to the remote node that is not yet acquired with a common time interval between the start of each downlink message, said common time interval being less than twice a time elapsed between sending one of the downlink messages from the hub and receiving the one of the downlink messages at the remote node, wherein

a first downlink message in the sequence includes a first acquisition command to acquire the remote node to be added to the network and cause the remote node to transmit a first acquisition response, and

a second downlink message immediately following the first downlink message in the sequence of downlink messages includes a second acquisition command for the remote node to transmit a second acquisition response; and

receiving the first acquisition response to the first downlink message at the hub after sending the second downlink message from the hub.

Claim 9 (Previously Presented): The method of claim 8, further comprising steps of:

allocating time for a sequence of uplink frames from the remote node to the hub with the common time interval between the start of each uplink frame; and

allocating time for at least one data communication time slot and at least one acquisition time slot within each uplink frame,

wherein each downlink message includes a burst time plan instructing the remote node to transmit a data burst within the at least one data communication slot of a subsequent

uplink frame and instructing the remote node to transmit an acquisition response within the at least one acquisition slot.

Claim 10 (Previously Presented): The method of claim 9, wherein each burst time plan includes station keeping parameters for at least two remote nodes that are not yet acquired and the burst time plan instructs at least one of the at least two remote nodes to transmit a data burst or an acquisition response according to the station keeping parameters.

Claim 11 (Original): The method of claim 10, wherein the station keeping parameters include at least one of a frequency, a symbol offset, and a power level.

Claim 12 (Currently Amended): A hub apparatus configured to acquire a remote node that is not yet acquired by the hub in a satellite communication network, said hub apparatus comprising:

an acquisition unit configured to send a first acquisition command to the remote node that is not yet acquired to acquire the remote node to be added to the network, said first acquisition command configured to instruct the remote node to send an acquisition response, and include an indication of a first frequency; and

a receiving unit configured to receive a first acquisition response based on the first acquisition command from the remote node using the first frequency;

a next remote selecting unit configured to select a next acquisition remote node according to at least one of a round robin algorithm, a least recently used algorithm, and a priority algorithm; and

a next frequency selecting unit configured to select a next frequency based on an offset frequency of a previous acquisition command.

wherein the second acquisition command identifies the next acquisition remote node for acquisition and includes the next frequency, wherein and

said acquisition unit is further configured to send a second acquisition command before the receiving unit receives the first acquisition response.

Claim 13 (Previously Presented): The hub apparatus of claim 12, wherein the second acquisition command identifies the remote node or another remote node that is not yet acquired for acquisition and includes one of the first frequency and a second frequency.

Claim 14 (Previously Presented): The hub apparatus of claim 12, further comprising:  
a detecting unit configured to detect a symbol offset in the first response; and  
an offset sending unit configured to send a symbol offset correction factor to the remote node, said correction factor used by the remote node in a subsequent transmission from the remote node to correct the detected symbol offset.

Claim 15 (Previously Presented): The hub apparatus of claim 12, wherein the acquisition unit is further configured to send at least a third acquisition command before the receiving unit receives the first acquisition response.

Claim 16 (Previously Presented): The hub apparatus of claim 12, wherein  
the acquisition unit is further configured to send the second acquisition command within a latency time of sending the first acquisition command, and  
the latency time is twice a time elapsed between sending a message and receiving the message at the remote node.

Claim 17 (Canceled).

Claim 18 (Previously Presented): The hub apparatus of claim 12, wherein the indication of the first frequency includes a frequency offset that informs the remote node to transmit a response based on a predetermined nominal remote transmit frequency and the frequency offset.

Claim 19 (Previously Presented): A hub apparatus configured to acquire a remote node that is not yet acquired by the hub in a synchronous communication network, said hub apparatus comprising:

- a transmitting unit configured to transmit a sequence of downlink messages to the remote node that is not yet acquired with a common time interval between the start of each downlink message, said common time interval being less than twice a time elapsed between transmitting one of the downlink messages from the transmitting unit and receiving the one of the downlink messages at the remote node,

- a first downlink message in the sequence includes a first acquisition command to acquire the remote node to be added to the network and cause the remote node to transmit a first acquisition response, and

- a second downlink message immediately following the first downlink message in the sequence of downlink messages includes a second acquisition command for the remote node to transmit a second acquisition response; and

- a receiving unit configured to receive the first acquisition response to the first downlink message after the transmitting unit sends the second downlink message.

Claim 20 (Previously Presented): The hub apparatus of claim 19, wherein the receiving unit is further configured to allocate time for a sequence of uplink frames from the remote node with the common time interval between the start of each uplink frame and allocate time for at least one data communication time slot and at least one acquisition time slot within each uplink frame,

wherein each downlink message includes a burst time plan instructing the remote node to transmit a data burst within the at least one data communication slot of a subsequent uplink frame and instructing the remote node to transmit an acquisition response within the at least one acquisition slot.

Claim 21 (Previously Presented): The hub apparatus of claim 20, wherein each burst time plan includes station keeping parameters for at least two remote nodes that are not already acquired and the burst time plan instructs at least one of the at least two remote nodes to transmit a data burst or an acquisition response according to the station keeping parameters.

Claim 22 (Original): The hub apparatus of claim 21, wherein the station keeping parameters include at least one of a frequency, a symbol offset, and a power level.

Claims 23-26 (Canceled).

Claim 27 (Previously Presented): A remote apparatus that is not yet acquired by a hub in a synchronous satellite communication network, said remote apparatus comprising:

a receiving unit configured to receive a sequence of downlink messages from the hub with a common time interval between the start of each downlink message, said common time

interval being less than twice a time elapsed between sending a message from the hub and receiving the message at the receiving unit;

a response sending unit configured to send a first acquisition response to the hub based on a first acquisition command from the hub to acquire the remote apparatus to be added to the network, said first acquisition command included in a first downlink message in the sequence and send a second acquisition response to the hub based on a second acquisition command included in a second downlink message in the sequence,

wherein the first acquisition response is received at the hub after the hub sends the second downlink message.

Claim 28 (Original): The remote apparatus of claim 27, wherein the response sending unit is further configured to allocate time for a sequence of uplink frames to the hub with the common time interval between the start of each uplink frame and allocate time for at least one acquisition time slot within a subsequent uplink frame and send an acquisition response to the hub within the at least one acquisition slot based on a burst time plan in the first downlink message that identifies the at least one acquisition time slot.

Claim 29 (Original): The remote apparatus of claim 28, wherein the response sending unit is further configured to allocate time for at least one data communication time slot within each uplink frame and send a data burst within the at least one data communication slot of a subsequent uplink frame based on the burst time plan in the first downlink message that identifies the at least one data communication slot.

Claim 30 (Previously Presented): The remote apparatus of claim 29, wherein the burst time plan includes station keeping parameters for the remote apparatus and another remote

apparatus that is not yet acquired and the response sending unit is further configured to send the data burst or the acquisition response based on the station keeping parameters.

Claim 31 (Original): The remote apparatus of claim 30, wherein the station keeping parameters include at least one of a frequency, a symbol offset, and a power level.

Claim 32 (Currently Amended): A non-transitory computer readable medium having computer program instructions which when executed by a computer cause the computer to perform the following steps:

sending a first acquisition command from a hub to a remote node that is not yet acquired by the hub, said first acquisition command sent to acquire the remote node to be added to the network,

instructing the remote node to send an acquisition response, and

including a first frequency;

sending a first acquisition response based on the first acquisition command from the remote node to the hub using the first frequency; ~~and~~

sending a second acquisition command from the hub before receiving the first acquisition response at the hub;

selecting a next acquisition remote node according to at least one of a round robin algorithm, a least recently used algorithm, and a priority algorithm; and

selecting a next frequency based on an offset frequency of a previous acquisition command,

wherein the second acquisition command identifies the next acquisition remote node for acquisition and includes the next frequency.

Claim 33 (Previously Presented): The computer readable medium of claim 32, wherein the second acquisition command identifies the remote node or another remote that is not yet acquired for acquisition and includes one of the first frequency and a second frequency.

Claim 34 (Previously Presented): The computer readable medium of claim 32, further storing instructions causing the computer to perform steps of:

detecting a symbol offset in the first response at the hub; and

sending a symbol offset correction factor from the hub to the remote node, said correction factor used by the remote node in a subsequent transmission from the remote node to the hub to correct the detected symbol offset.

Claim 35 (Previously Presented): The computer readable medium of claim 32, further storing instructions causing the computer to perform a step of:

sending at least a third acquisition command from the hub to the remote node before receiving the first response at the hub.

Claim 36 (Previously Presented): The computer readable medium of claim 32, further storing instructions causing the computer to perform a step of:

sending the second acquisition command from the hub within a latency time of

sending the first acquisition command from the hub,

wherein the latency time is twice a time elapsed between sending a message from the hub and receiving the message at the remote node.

Claim 37 (Canceled).

Claim 38 (Previously Presented): The computer readable medium of claim 32, wherein the first frequency includes a frequency offset that informs the remote node to transmit a response based on a predetermined nominal remote transmit frequency and the frequency offset.

Claim 39 (Previously Presented): A non-transitory computer readable medium having computer program instructions which when executed by a computer cause the computer to perform the following steps of acquiring a remote node that is not yet acquired by a hub in a synchronous satellite communication network:

transmitting a sequence of downlink messages from the hub to the remote node that is not yet acquired with a common time interval between the start of each downlink message, said common time interval being less than twice a time elapsed between sending one of the downlink messages from the hub and receiving the one of the downlink messages at the remote node,

a first downlink message in the sequence includes a first acquisition command to acquire the remote node to be added to the network and causes the remote node to transmit a first acquisition response, and

a second downlink message immediately following the first downlink message in the sequence of downlink messages includes a second acquisition command for the remote node to transmit a second acquisition response; and

receiving the first acquisition response to the first downlink message at the hub after sending the second downlink message from the hub.

Claim 40 (Previously Presented): The computer readable medium of claim 39, further storing instructions causing the computer to perform steps of:

allocating time for a sequence of uplink frames from the remote node to the hub with the common time interval between the start of each uplink frame; and

allocating time for at least one data communication time slot and at least one acquisition time slot within each uplink frame,

wherein each downlink message includes a burst time plan instructing the remote node to transmit a data burst within the at least one data communication slot of a subsequent uplink frame and instructing the remote node to transmit an acquisition response within the at least one acquisition slot.

Claim 41 (Previously Presented): The computer readable medium of claim 40, wherein each burst time plan includes station keeping parameters for at least two remote nodes that are not yet acquired and the burst time plan instructs at least one of the at least two remote nodes to transmit a data burst or an acquisition response according to the station keeping parameters.

Claim 42 (Previously Presented): The computer readable medium of claim 41, wherein the station keeping parameters include at least one of a frequency, a symbol offset, and a power level.

Claim 43 (Currently Amended): A communication system comprising:  
a hub configured to send a first acquisition command to a remote node that is not yet acquired by the hub, said first acquisition command sent to acquire the remote node to be added to the communication system,

instructing the remote node to send an acquisition response, and  
including a first frequency,  
said remote node configured to send a first acquisition response based on the first  
acquisition command to the hub using the first frequency, and  
said hub further configured to send a second acquisition command before receiving  
the first acquisition response, select a next acquisition remote node according to at least one  
of a round robin algorithm, a least recently used algorithm, and a priority algorithm, and  
select a next frequency based on an offset frequency of a previous acquisition command,  
wherein the second acquisition command identifies the next acquisition remote node  
for acquisition and includes the next frequency.

Claim 44 (Previously Presented): The system of claim 43, wherein the second  
acquisition command identifies the remote node or another remote node that is not yet  
acquired for acquisition and includes one of the first frequency and a second frequency.

Claim 45 (Original): The system of claim 43, wherein the hub is further configured to  
detect a symbol offset in the first response and send a symbol offset correction factor to the  
remote node, and the remote node is further configured to send a subsequent transmission to  
the hub using said correction factor to correct the detected symbol offset.

Claim 46 (Original): The system of claim 43, wherein the hub is further configured to  
send at least a third acquisition command to the remote node before receiving the first  
response.

Claim 47 (Previously Presented): The system of claim 43, wherein the hub is further configured to send the second acquisition command within a latency time of sending the first acquisition command,

wherein the latency time is twice a time elapsed between sending a message from the hub and receiving the message at the remote node.

Claim 48 (Canceled).

Claim 49 (Original): The system of claim 43, wherein the first frequency includes a frequency offset that informs the remote node to transmit a response based on a predetermined nominal remote transmit frequency and the frequency offset.

Claim 50 (Previously Presented): A synchronous satellite communication system comprising:

a hub configured to transmit a sequence of downlink messages to a remote node that is not yet acquired by the hub with a common time interval between the start of each downlink message, said common time interval being less than twice a time elapsed between sending one of the messages from the hub and receiving the one of the messages at the remote node,

a first downlink message in the sequence including a first acquisition command to acquire the remote node to be added to the communication system and cause the remote node to transmit a first acquisition response, and

a second downlink message immediately following the first downlink message in the sequence of downlink messages including a second acquisition command for the remote node to transmit a second acquisition response,

wherein the first acquisition response to the first downlink message is received at the hub after sending the second downlink message from the hub.

Claim 51 (Previously Presented): The system of claim 50, wherein the hub is further configured to allocate time for a sequence of uplink frames from the remote node to the hub with the common time interval between the start of each uplink frame and allocate time for at least one data communication time slot and at least one acquisition time slot within each uplink frame,

wherein each downlink message includes a burst time plan instructing the remote node to transmit a data burst within the at least one data communication slot of a subsequent uplink frame and instructing remote node to transmit an acquisition response within the at least one acquisition slot.

Claim 52 (Previously Presented): The system of claim 51, wherein each burst time plan includes station keeping parameters for at least two remote nodes and the burst time plan instructs at least one of the at least two remote nodes to transmit a data burst or an acquisition response according to the station keeping parameters.

Claim 53 (Original): The system of claim 52, wherein the station keeping parameters include at least one of a frequency, a symbol offset, and a power level.